

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendment and following discussion, is respectfully requested.

Claims 1-25 are pending in the present application. Claims 19 and 21-22 are amended. Claims 1-18 are withdrawn. Support for the amendment to Claim 19 can be found in the specification at least at page 48, lines 15-20. Support for the amendments to Claims 21-22 is self-evident. Thus, no new matter is added.

The outstanding Office Action rejected Claims 19-25 under 35 U.S.C. § 102(e) as anticipated by Awano et al. (U.S. Patent No. 6,818,107, hereinafter “Awano”); rejected Claims 19-25 under 35 U.S.C. § 102(b) as anticipated by Masanobu et al. (JP 2003-033646, hereinafter “Masanobu”); rejected Claims 19-20 and 22-23 under 35 U.S.C. § 102(b) as anticipated by “Low Current Density Electrochemical Cell for NO Decomposition” by Awano et al. (International Conference on Solid State Ionics, Materials and Processes for Energy and Environment, July 2001, page 183, hereinafter “Awano 2”); and rejected Claims 19-25 on the grounds of non-statutory obviousness-type double patenting as unpatentable over Claims 1-8 of Awano.

Submitted herewith is an English translation of Japanese priority document JP 2002-073089 along with a statement signed by the translator indicating that the translation is accurate.

Applicants respectfully traverse the rejection of Claims 19-25 under 35 U.S.C. § 102(e) as anticipated by Awano.

Applicant respectfully notes that the Foreign Application Priority Date for Japanese priority document JP 2002-073089 is March 15, 2002. The filing date of Awano is March 20, 2002, which post-dates the present application’s March 15, 2002, Foreign Application Priority Date. Accordingly, Awano fails to qualify as a reference against the present

application under any section of 35 U.S.C. § 102. Therefore, Applicant respectfully requests the rejection of Claims 19-25 under 35 U.S.C. § 102(e) be withdrawn.

In addition, Applicants respectfully traverse the rejection of Claims 19-25 under 35 U.S.C. § 102(b) as anticipated by Masanobu.

As discussed above, the Foreign Application Priority Date for Japanese priority document JP 2002-073089 is March 15, 2002. The publication date of Masanobu is February 4, 2003, which post-dates the present application's March 15, 2002, Foreign Application Priority Date. Accordingly, Masanobu fails to qualify as a reference against the present application under any section of 35 U.S.C. § 102. Therefore, Applicant respectfully requests the rejection of Claims 19-25 under 35 U.S.C. § 102(b) be withdrawn.

In addition, Applicants respectfully traverse the rejection of Claims 19-20 and 22-23 under 35 U.S.C. § 102(b) as anticipated by Awano 2.

Amended independent Claim 19 recites a chemical reactor that includes a chemical reaction component and an ionization reaction inhibition layer located as an intermediate layer or a mixed layer or a surface coating layer disposed on a surface of the chemical reaction component. The chemical reaction component includes a reduction phase that includes a substance of mixed conductivity, an ion-conductive phase that includes a substance having ionic conductivity, and an oxidation phase that includes a substance having both electron conductivity and ion conductivity, in order. The ionization reaction inhibition layer or the surface coating layer is configured to inhibit an ionization reaction of adsorbed oxygen by inhibiting or blocking a conduction path of ionization current.

Turning now to the cited art, Awano 2 describes an electrochemical cell. However, Awano 2 fails to describe an ionization reaction inhibition layer located as an intermediate layer or a mixed layer or a surface coating layer disposed on a surface of the chemical reaction component and that the ionization reaction inhibition layer or the surface coating

layer is configured to inhibit an ionization reaction of adsorbed oxygen by inhibiting or blocking a conduction path of ionization current. Instead, Awano 2 describes an electrochemical cell with an NiO-YSZ mixed oxide as a working electrode that covers a Pt cathode. In other words, Awano 2 fails to disclose or suggest an ionization reaction inhibition layer located as an intermediate layer or a mixed layer or a surface coating layer disposed on a surface of the chemical reaction component, much less an ionization reaction inhibition layer or the surface coating layer that is configured to inhibit an ionization reaction of adsorbed oxygen by inhibiting or blocking a conduction path of ionization current.

Furthermore, the outstanding Office Action asserts:

Awano et al teach a chemical reactor for subjecting a treatment substance (NO) to a chemical reaction, wherein a surface coating layer (mixed NiO-YSZ) is formed on the chemical reaction component surface (cathode) and which **inherently inhibits** the ionization reaction of adsorbed oxygen on the surface of a chemical reaction component (cathode) where the chemical reaction of the treatment substance (NO) proceeds. (Emphasis added).¹

Applicants respectfully submit that inherency has not been established in the outstanding Office Action. “The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” MPEP § 2112, *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). Moreover:

To establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”

In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

¹ See outstanding Office Action at page 6.

As set forth in MPEP § 2112, “[i]n relying upon the theory of inherency, the examiner **must** provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” (Emphasis added). *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Accordingly, for at least the above-noted reasons, Applicants respectfully submit that amended independent Claim 19, and claims depending therefrom, patentably define over Awano 2. Therefore, Applicants respectfully request the rejection of Claims 19-20 and 22-23 under 35 U.S.C. § 102(b) be withdrawn.

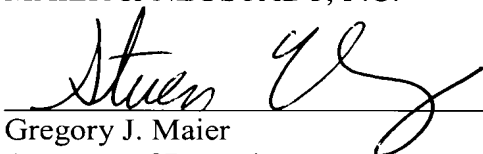
In addition, Applicants respectfully traverse the rejection of Claims 19-25 on the grounds of non-statutory obviousness-type double patenting as unpatentable over Claims 1-8 of Awano.

As discussed above, Awano fails to qualify as a reference against the present application. Therefore, Applicants respectfully request the rejection of Claims 19-23 on the grounds of non-statutory obviousness-type double patenting be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Steven" followed by a stylized flourish, is written over a horizontal line.

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